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THE IMMUNITY OF THE JAPANESE CHESTNUT TO THE BARK DISEASE.

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THE IMMUNITY OF THE JAPANESE CHESTNUT TO THE BARK DISEASE.

By Haven Metcalf, *Pathologist in Charge of the Laboratory of Forest Pathology.*

THE EXTENT OF THE BARK DISEASE.

The bark disease of the chestnut, caused by the fungus *Diaporthe parasitica* Murrill, has spread rapidly from Long Island, where it was first observed, and is now reported from Connecticut, Massachusetts, Vermont, New York as far north as Poughkeepsie, New Jersey, Pennsylvania, and possibly Delaware. It is no exaggeration to say that it is at present the most threatening forest-tree disease in America. Unless something now unforeseen occurs to check its spread, the complete destruction of the chestnut orchards and forests of the country, or at least of the Atlantic States, is only a question of a few years' time.

AN IMMUNE VARIETY.

Observations made by the writer during the past year indicate that all varieties and species of the genus Castanea are subject to the disease except the Japanese varieties (*Castanea crenata* Sieb. and Zucc.). All of the latter that have been observed in the field or tested by inoculations have been found immune. This fact can hardly fail to be of fundamental importance to the future of chestnut nut culture. Although the nuts are distinctly inferior in flavor to the European varieties, such as Paragon, the Japanese chestnut is already grown on a large scale as a nut-producing tree. There are, however, many trade varieties of dubious origin. Some of these may prove later to be subject to the disease. Immunity tests of all known varieties of chestnuts have been undertaken.

Attempts will also be made to hybridize the Japanese with American and European varieties, with the hope of combining the immunity of the former with the desirable qualities of the latter.

However excellent as a nut and ornamental tree, the value of the Japanese chestnut as a forest tree is doubtful. It can be recommended only experimentally at present for forest planting. It certainly will not take the place of the American chestnut. The tree is said to attain a height of 50 or 60 feet in Japan. As seen in this country it is a handsome tree, dwarfish and compact in habit, and rather slow growing. It has hardly had time to show how large it can grow.

The immunity of the Japanese chestnut, together with the fact that it was first introduced and cultivated on Long Island and in the very locality from which the disease appears to have spread, suggests the interesting hypothesis that the disease was introduced from Japan. So far, however, no facts have been adduced to substantiate this view.

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